

Weekly Report

2018.0730-2018.0805

1.This Week

Power Grid Deep Learning Paper

- 1.We discovered a classification label problem in the data that some label classes may refer to the same fault center and revised this problem this week.
- 2.We add training datasets for which the fault takes place at different time stamps to evaluate the training accuracy.
- 3.We receive a 93.6% accuracy on the validation data set for our model. And we prepare to:
 - train the model to classify the fault type and the fault location at the same time
 - find a way to automatically tune the model parameters
 - train the model to the data set where buses are sampled by the order of the information entropy
- 4.Wu Fan is learning keras and tensorflow. I assign him a first task to run a SVM model on the MINIST dataset.

SQC Paper

1. Zongzhuang is not available yet.

Others

- 1.Participate the classes of the summer school.
- 2.revise the waveline paper.
- 3.Liwen applies aperiodic Fourier transformation to power grid time series and we plan to try to used the transformed data to project and reduce the dimension of the data to see the performance.
- 4.Write the paper tricks (of system papers) following the writing structures and contributions we organized last week. We (Xumeng & I) have finished the tricks for system papers for VIS. The plan:

| 时间 | 计划进度 | 完成情况 |
|----------|----------------------------|------|
| 7.2-7.9 | 1.确定任务与分工 2.明确整理思路 | 已完成 |
| 7.10-8.5 | 1.完成各自分工的套路整理 | 进展中 |
| 8.5-8.8 | 1.汇总各自整理的内容 2.组织讨论并互相补充 | |
| 8.9-8.22 | 1.根据讨论补充相应内容 | |

WaveLines Revision:

1. We design the evaluation process. The evaluation is divided into two parts:
 - test the accuracy of users to find patterns (users are asked to find specific patterns in limited time)
 - test the effectiveness of the system (users are asked to find possible patterns freely in limited time)
2. We revise the system to process the evaluation process and 2e finished 2 interviewee of the evaluation

changes to be made of the paper:

【done】 1. make clear the definitions of power grid simulation terms like transient simulation stc..(make a form)

2. clearly define all patterns mentioned in this paper and discuss how existing works distinguish these patterns in the related work.

3. revise the evaluation part: add quantitative evaluation of how accurate wavelines can help to find patterns (effectiveness), how long will take (efficiency) and complete understanding (comprehensiveness).

【done】 4. explain the data preprocessing into a whole continuous process.

【done】 5. related work: explain why methods used to visualize pairwise variables mentioned are not used in this paper. (use this to guide the alternative designs discussion.)

【done】 6. use less words but add a figure to explain the section waveline design trade-off.

【done】 7. explain more carefully why we use a bulb metaphor.

2. Progress

| Work | Deadline | Progress |
|---|----------|---|
| Power grid paper with Deeping learning | - | 1. Adjust the model parameter. 2. Generating data. |
| SQC Paper | - | About to started. |
| WaveLine revision | ASAP | Follow the revision plan to revise the paper. |